

REMARKS

Claims 1, 2, 4, 6 to 9, 12 to 17, 19 to 24, 26 to 33, 35 to 39, 41 to 59, 61 to 64, 68, 70 to 73, 75 to 80, 82, 84 to 88, and 90, as amended, appear in this application for the Examiner's review and consideration. Claims 3, 5, 10, 11, 18, 25, 34, 40, 60, 65 to 67, 69, 74, 81, 83, and 89 are cancelled without prejudice to Applicants rights to file one or more divisional or continuation applications directed to the subject matter of those claims. The amendments are fully supported by the specification and claims as originally filed. Therefore there is no issue of new matter.

Claims 1 to 90 were rejected under 35 U.S.C. § 112, second paragraph, as allegedly being indefinite for the reasons set forth on pages 2 to 4 of the Office Action.

In response, Applicants submit that the claims have been amended to delete the recitation of "R₃ is a substituent having a Hammett value less than about -0.17, between about -0.15 and 0.05, or greater than about 0.07," and to add the recitation of either "R₃ is a substituent having a Hammett value greater than about 0.6," or "at least one of R₃ and R₅ is CN."

With regard to the recitation of the formula C_nF_{2n+1} in the claims, the claims have been amended to recite "perfluoroalkyl" rather than the formula, as suggested by the Examiner.

With regard to the aryl and heteroaryl groups recited in the claims, Applicants submit that the claims have been amended to delete "aryl or heteroaryl groups substituted with halogens, CN, CF₃, C_nF_{2n+1}, trifluorovinyl, NO₂, CO₂R, C(O)R, S(O)R, SO₂R, SO₃R, P(O)R, PO₂R, PO₃R," as that recitation is redundant to the recitation of aryl and heteroaryl groups in the claims, which may be substituted or unsubstituted, thereby eliminating any possible confusion.

With regard to the preamble of claims 2 to 15, those claims have been amended to change the preamble to "The emissive material of claim 1," providing the required antecedent basis for each claim.

With regard to an antecedent for "the electron withdrawing groups" in claims 12 and 76, claims 8 and 17 have been amended to recite "wherein at least one substituent is an electron withdrawing group selected from ...," and claims 12 and 76 have been amended to recite "wherein at least one substituent is an electron donating group selected from..."

With regard to the recitation of “C-CR” in claims 8 and 72, those claims have been amended to recite “C≡CR.”

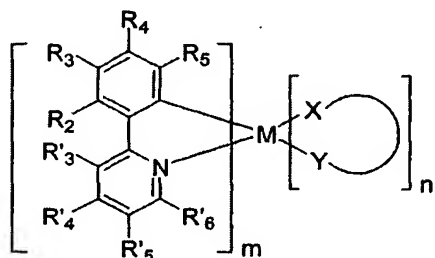
With regard to the last four lines of claim 16 and similar claims, those claims have been amended to recite “wherein if neither R₃ nor R₅ is an electron donating group, R₄ is an electron donating group.”

With regard to claims 62 and 63, that claim 62 has been amended to delete “at least,” and claim 63 has been amended to delete the first occurrence of “at least”.

Therefore, the claims particularly point out and distinctly claim the subject matter Applicants regard as the invention, and the claims are not indefinite. Accordingly, it is respectfully requested that the Examiner withdraw the rejection of the claims under 35 U.S.C. § 112, second paragraph.

Claims 1 to 5, 8, 12, 13, 15 to 17, 19, 21 to 24, 29, 31, 33 to 36, 41 to 43, 47, 48, 52 to 55, 59, 65 and 66 were rejected under U.S.C. § 102(e), as allegedly being anticipated by U.S. Patent Application Publication No. 2003/0108771 to Lecloux et al. (“Lecloux”) for the reasons set forth on pages 4 and 5 of the Office Action.

In response, Applicants submit that the presently claimed invention is directed to compositions, emissive materials, and light emitting devices comprising the compositions and materials of the invention. The compositions of the invention are represented by the structure



As recited in claim 1, R₃ is a substituent having a Hammett value of at least about 0.6. As recited in the other independent claims, i.e., claims 16, 24, 33, 47, 59, 64, 68, and 88, at least one of R₃ and R₅ is CN.

In contrast to the presently claimed invention, Lecloux discloses electroluminescent platinum compounds and devices made with such compounds in which substitutants R⁵ and R⁷, which are in positions generally equivalent to R₃ and R₅, respectively, of the presently claimed compositions, are selected from the group consisting of H, D, C_R(H+F)_{2R+1}, F,

$\text{OC}_R(\text{H}+\text{F})_{2R+1}$, OCF_2Y , SR^3 , and $\text{N}(\text{R}^3)$, or adjacent R groups can join to form a 5- or 6-membered ring, where H or $\text{C}_n\text{H}_{2n+1}$. Lecloux does not disclose that either of the disclosed substituents R^5 and R^7 can be CN, or that either of those substituents can have a Hammett value of at least about 0.6. Moreover, Lecloux does not disclose any substituent having a Hammett Value greater than about 0.6, such as CN, which has a Hammett Value of 0.67. Therefore, Lecloux does not disclose the presently claimed invention.

Therefore, as Lecloux does not disclose the presently claimed invention, the claims are not anticipated. Accordingly, it is respectfully requested that the Examiner withdraw the rejection of claims 1 to 5, 8, 12, 13, 15 to 17, 19, 21 to 24, 29, 31, 33 to 36, 41 to 43, 47, 48, 52 to 55, 59, 65 and 66 under 35 U.S.C. §102(e).

Claims 1 to 9, 11 to 17, 19, 21 to 24, 29 to 31, 33 to 39, 41 to 48, 52 to 54, 56 to 59, 64 to 66, 68 to 72, 76 to 78, 88 and 89 were rejected under U.S.C. § 102(e), as allegedly being anticipated by U.S. Patent Application Publication No. 2003/0059646 to Kamatani et al. (Kamatani”) for the reasons set forth on pages 6 to 9 of the Office Action, and claims 1 to 24, 29 to 31, 33 to 49 and 64 to 90 were rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over Kamatani for the reasons set forth on pages 10 and 11 of the Office Action.

In response, Applicants submit that Kamatani discloses luminescence devices and display apparatus incorporating an organic film. The disclosed organic films contain metal complexes having ligands substituted with F and alkyl substituents that are substituted and unsubstituted. Kamatani does not disclose or suggest any composition having a CN substituent in a position generally equivalent to either the R_3 or R_5 position of the presently claimed compositions. Moreover, all of the substituents disclosed by Kamatani have Hammett Values significantly less than the presently claimed value of 0.6.

Therefore, as Kamatani does not disclose or suggest the presently claimed compositions, the present claims are not anticipated by or obvious over that reference. Accordingly, it is respectfully requested that the Examiner withdraw the rejections of the claims under 35 U.S.C. §§ 102(e) and 103(a) over Kamatani.

Claims 1 to 8, 13, 14, 24, 29, 30, 33 to 38, 42, 44, 59, 65, and 66 were rejected under 35 U.S.C. §103(a), as allegedly being unpatentable over U.S. Patent Application Publication No. 2002/0121638 to Gruskin et al. (Gruskin”) for the reasons set forth on pages 11 and 12 of the Office Action.

In response, Applicants submit that, as discussed above, claim 1 of the present application recites that, in the compositions of the presently claimed invention, R_3 has a Hammett Value of at least about 0.6, and the other independent claims recite that at least one

of R₃ and R₅ is CN. In contrast, Gruskin discloses electroluminescent iridium compounds substituted with fluorinated phenylpyridines, phenylpyrimidines, and phenylquinolines and devices made with such compounds. None of the compounds disclosed by Gruskin are substituted with CN in a position generally equivalent to R₃ and R₅ of the presently claimed compounds, and none of the disclosed compounds has a substituent having a Hammett Value of more than about 0.6, as presently claimed.

Therefore, Gruskin does not disclose or suggest the compounds of the presently claimed invention, and, thus, the present claims are not obvious over that reference. Accordingly, it is respectfully requested that the Examiner withdraw the rejection of claims 1 to 8, 13, 14, 24, 29, 30, 33 to 38, 42, 44, 59, 65, and 66 under 35 U.S.C. § 103(a) over Gruskin.

Claims 1, 3 to 8, 12 to 17, 19, 21, 21 to 38, 41 to 49, 52 to 61, 64 to 72, 76 to 81, 83 and 85 to 90 were provisionally rejected under the doctrine of obviousness-type double patenting as being allegedly unpatentable over claims 1 to 7, 9, 13 to 20, 23, 24, 26, 29, 33, 37, 40, 41, 43 and 46 of co-pending application no. 10/288,785 for the reasons set forth on page 13 of the Office Action.

In response, Applicants submit that a Terminal Disclaimer will be timely filed upon receipt of an indication of allowable subject matter in the present claims.

With regard to claims 37 and 38, Applicants submit that claim 37 has been amended to recite that at least one of R₂ and R₄ is electron withdrawing.

With regard to the penultimate line of claim 1, that claim has been amended to correct the typographical error.

Applicants thus submit that the entire application is now in condition for allowance, an early notice of which would be appreciated. Should the Examiner not agree with Applicants' position, a personal or telephonic interview is respectfully requested to discuss any remaining issues prior to the issuance of a further Office Action, and to expedite the allowance of the application.

No fee is believed to be due for the filing of this Amendment. Should any fees be due, however, please charge such fees to Deposit Account No. **11-0600**.

Respectfully submitted,

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